

Amendment
Appl. no. 10/599, 331
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GB040074US1

IN THE CLAIMS

Kindly replace the claims of record with the following full set of claims:

1. (Currently amended) A variable lens comprising:
- a substantial cylindrical fluid chamber (22) including a first, electrically conductive, fluid (40) and a second, non-conductive, fluid (50), the fluids being non-miscible, in contact with each other and having different indices of refraction, and
 - an electrode configuration comprising a first electrode (34) in contact with the first fluid (40) and second electrode means (30,32; 92) arranged at the chamber wall (24), characterized in that
 - a volume of one of the fluids (40) is arranged between two volumes of the other fluid (50), ~~in that~~
 - the second electrode means comprises at least two sub-electrodes (30,32;92) each covering, in the direction of the cylinder axis, different portions of the cylinder wall, where a size of said volume of said one of the fluids is chosen so that at least one of said two-electrodes remains in contact with said volume; and and in that
 - the chamber wall is provided with an opening two openings (36,37) at each of its opposite ends which, said openings being are interconnected by means of an external fluid guide (38), to channel to circulate one of the fluids from one of said opposite ends to the other of said opposite ends as the fluid arranged between the two volumes of the other fluid moves within said in and out the chamber.

2. (Original) A variable lens as claimed in claim 1, characterized in that the inner wall of the fluid chamber facing the fluids is covered with an insulating layer (48).

3. (Original) A variable lens as claimed in claim 2, characterized in that the insulating layer (48) is hydrophobic.

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4. (Previously presented) A variable lens as claimed in claim 1, characterized in that a volume of the first fluid (40) is arranged between volumes of second fluid (50).

5. (Previously presented) A variable lens as claimed in claim 1, characterized in that a volume of the second fluid (50) is arranged between volumes of the first fluid (40).

6. (Original) A variable lens as claimed in claim 5, characterized in that the first electrode (34) is arranged substantially in one of the openings (36; 37) in the chamber wall (24).

7. (Previously presented) A variable lens (90) as claimed in claim 1 characterized in that the second electrode means comprises a series of annular electrodes (92).

8. (Previously presented) A variable lens as claimed in claim 1 in that the fluids (40, 50) are liquids.

9. (Original) A variable lens as claimed in claim 8, characterized in that the first liquid (40) is salted water and the second liquid (50) is oil.

10. (Previously presented) A variable lens as claimed in claim 1, wherein the lens (20) is a zoom lens.

11. (Currently amended) An image-capturing device (100) comprising a lens system (102) and an image-receiving unit (112), characterized in that the lens system (102) comprises a variable lens comprising:

- a substantial cylindrical fluid chamber (22) including a first, electrically conductive, fluid (40) and a second, non-conductive, fluid (50), the fluids being non-miscible, in contact with each other and having different indices of refraction, and
- an electrode configuration comprising a first electrode (34) in contact with the

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first fluid (40) and second electrode means (30,32; 92) arranged at the chamber wall (24), characterized in that

- a volume of one of the fluids (40) is arranged between two volumes of the other fluid (50),
- the second electrode means comprises at least two sub-electrodes (30,32;92) each covering, in the direction of the cylinder axis, different portions of the cylinder wall, where a size of said volume of said one of the fluids is chosen so that at least one of said two-electrodes remains in contact with said volume; and
- the chamber wall is provided with an opening (36,37) at each of its opposite ends, which said openings being are interconnected by means of an external fluid guide (38), to channel one of the fluids from one of said opposite ends to the other of said opposite ends as the fluid arranged between the two volumes of the other fluid moves within said chamber.

~~as claimed in claim 4.~~

12. (Cancelled)

13. (Currently amended) ~~A camera as claimed in claim 12~~ The image-capturing device of claim 11, wherein the lens system (102) is a zoom lens system.

14. (Currently amended) ~~A hand-held apparatus (120) comprising~~ The image-capturing device of claim 11, wherein the device is a camera~~as claimed in claim 12.~~

15. (Currently amended) ~~A hand-held apparatus~~ The image-capturing device of claim 11, wherein the device ~~wherein the apparatus is a mobile phone (120).~~

16. (Currently amended) An optical device (160) for scanning an information layer (154) and comprising a radiation source unit (162) for supplying a scanning beam (164, 170,172) an optical lens system (168,172) for focusing the scanning beam to a

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scanning spot (178) in the information layer and a radiation-sensitive detection unit (186) for converting scanning beam radiation from the information layer in electrical signals (188), characterized in that the lens system comprises a variable lens (20; 80; 90) comprising:

- a substantial cylindrical fluid chamber (22) including a first, electrically conductive, fluid (40) and a second, non-conductive, fluid (50), the fluids being non-miscible, in contact with each other and having different indices of refraction, and
- an electrode configuration comprising a first electrode (34) in contact with the first fluid (40) and second electrode means (30,32; 92) arranged at the chamber wall (24), characterized in that
- a volume of one of the fluids (40) is arranged between two volumes of the other fluid (50),
- the second electrode means comprises at least two sub-electrodes (30,32;92) each covering, in the direction of the cylinder axis, different portions of the cylinder wall, wherein said a size of said volume of said one of the fluids is chosen so that at least one of said two-electrodes remains in contact with said volume; and
- the chamber wall is provided with an opening two-openings (36,37) at each of its opposite ends, said openings being are interconnected by means of an external fluid guide (38),to channel one of the fluids from one of said opposite ends to the other of said opposite ends as the fluid arranged between the two volumes of the other fluid moves within said chamber.

17. (Original) An optical device as claimed in claim 16 for scanning at least two information layers (154) at different depths in one record carrier 9150) and comprising an objective lens system (174) and a collimator lens system (172), characterized in that the variable lens (20; 80) is included in the collimator lens system to correct for spherical aberrations introduced by the different depths of the information layers.

18.(Original) An optical device as claimed in claim16 for scanning at least two

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information layers (154) of different format, wherein the radiation source unit (162) is switchable to emit at least two beams (164) of different wavelengths and wherein the lens system comprises an objective lens system (174), characterized in that the variable lens (20; 80; 90) is included in the objective lens system (174) to adapt this system for the different formats of the information layers (154).

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